

## Metabolic characterization of continuous cell cultures of recombinant NS0 cell line to reach high cell densities during stationary phase in protein-free medium

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One of the relatively new “omic” sciences is the field of metabolomics. Metabolomics is therefore the analysis of small molecules that constitute the metabolism, and it offers the closest direct measurements of a cell’s physiological activity. The production of biopharmaceuticals from animal cells has not embraced metabolomics as a tool. This is mostly because metabolites are now not the primary focus and the relationship between metabolites and protein production in different media are not fully understood. It is for this reason that metabolomics can bridge the gap of understanding as to the dynamics of metabolism, cell growth and protein production. The metabolomics can be used to optimize conditions of bioreactors or the development chemically defined media. Characterizing cell lines, culture media and selection of cell lines are vital steps in the process development of biologics.

The NS0 mouse myeloma cell line has become one of the most popular systems for large-scale heterologous protein expression. For reasons of regulatory compliance, cost, batch consistency, downstream processing and material availability, industrial applications of NS0 has moved towards serum or protein-free medium platforms. The molecular mechanisms of host and recombinant NS0 cell lines that could be related to the adaptation to protein-free media were studied by de la Luz et al. In this study we reported metabolite and protein level changes related with the adaptation of NS0 to protein-free media using GC-MS and SILAC technologies in order to complete and validate the previous mechanism.

### Biography

Kathya R de la Luz has completed her Ph.D. at the age of 32 years in 2009 from University of Havana, Cuba in collaboration with Simon Gaskell group in Manchester University, UK. She is the Head of Protein Analysis Department from Process Development Direction, INIM, at the Center of Molecular Immunology in Cuba. She has published around 15 papers in reputed journals and is serving as an editorial board member of repute.

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